

6/27/2016

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

TestAmerica Laboratories, Inc.

TestAmerica Richland

2800 George Washington Way

Richland, WA 99352

Tel: (509)375-3131

TestAmerica Job ID: 300-3138-1

TestAmerica Sample Delivery Group: WC1101

Client Project/Site: F16-042

For:


CH2M Hill Plateau Remediation Company

PO BOX 1600

Mail Stop R3-50

Richland, Washington 99352

Attn: CPP Sample Management



Authorized for release by:

6/27/2016 9:25:57 AM

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Designee for

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I certify that this Certificate of Analysis is in compliance with the SOW, both technically and for completeness, for other than the conditions detailed in this package. Release of the data contained in this hard copy data package has been authorized by the Laboratory Manager, or a designee as verified by the attached signature.

The laboratory is accredited to EPA 7196A in Solid and Chemical Materials, per Washington State Department of Ecology this is approved for non-discharge water samples. The sample/ sample duplicate RPD agreement is not applicable if one or both results are less than five times the MDL.

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Definitions/Glossary

Client: CH2M Hill Plateau Remediation Company
Project/Site: F16-042

TestAmerica Job ID: 300-3138-1
SDG: WC1101

Qualifiers

HPLC/IC

Qualifier	Qualifier Description
D	The reported value is from a dilution.
U	Analyzed for but not detected.

General Chemistry

Qualifier	Qualifier Description
U	Analyzed for but not detected.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
α	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CNF	Contains no Free Liquid
DER	Duplicate error ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision level concentration
MDA	Minimum detectable activity
EDL	Estimated Detection Limit
MDC	Minimum detectable concentration
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative error ratio
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

6/27/2016

Case Narrative

Client: CH2M Hill Plateau Remediation Company
Project/Site: F16-042

TestAmerica Job ID: 300-3138-1
SDG: WC1101

Job ID: 300-3138-1

Laboratory: TestAmerica Richland

Narrative

Job Narrative 300-3138-1

Comments

No additional comments.

Receipt

The samples were received on 5/26/2016 10:15 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 5.8° C.

HPLC/IC

Method 300.0: Manual integration was performed on the following sample for Nitrite as N: B35VD9 (300-3138-3).

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

General Chemistry

Method 7196A: The following samples were analyzed outside of analytical holding time: B35VD8 (300-3138-1) and B35VF3 (300-3138-2). For more information refer to SIR attached to report.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

SAMPLE ISSUE RESOLUTION

SIR NUM SIR16-445
REV NUM 0
DATE INITIATED 6/27/2016

SAMPLE EVENT INFORMATION

SAF NUM(S) F16-042
OPERABLE UNIT(S) 100-NR-2
PROJECT(S) 100-NR-2 GW
SAMPLE EVENT TITLE(S) 100-NR-2 Well Drilling and Installation of Wells
LABORATORY TestAmerica Incorporated, Richland

SAMPLING INFORMATION

NUMBER OF SAMPLES 2
SAMPLE NUMBERS B35VD8, B35VF3
SAMPLE MATRIX WATER
COLLECTION DATE 5/26/2016 - 5/26/2016
SDG NUM WC1101

ISSUE BACKGROUND

CLASS Laboratory Issue
TYPE Analysis Holding Time Exceeded
DESCRIPTION The samples listed above were analyzed outside of hold time for Cr VI analysis due to lab error.

DISPOSITION

DESCRIPTION Initiate SIR, report results and include hold time comment in the case narrative.

JUSTIFICATION Final Disposition: Accept proposed resolution.

SUBMITTED BY: Steven Campbell DATE: 06/24/2016
 ACCEPTED BY: Scot Fitzgerald DATE: 06/27/2016

CH2M Hill Plateau Remediation Company		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST		F16-042-002	PAGE 1 OF 1
COLLECTOR	Frank Hall CHPRC	COMPANY CONTACT	TELEPHONE NO.	PROJECT COORDINATOR	PRICE CODE
SAMPLING LOCATION	C9400, I-005	PROJECT DESIGNATION	100-NR-2 Drilling - Water	SAF NO.	AIR QUALITY
ICE CHEST NO.	N/A	FIELD LOGBOOK NO.	HNF-N-645 4-11	ACTUAL SAMPLE DEPTH	COA
SHIPPED TO	TestAmerica Incorporated, Richland	OFFSITE PROPERTY NO.	65,5	304070	METHOD OF SHIPMENT
		BILL OF LADING/AIR BILL NO.		GOVERNMENT VEHICLE	

MATRIX*	POSSIBLE SAMPLE HAZARDS/ REMARKS	PRESERVATION	Cool <=6C
A=Air	*Contains Radioactive Material at concentrations that are not regulated for	HOLDING TIME	24 Hours
DI=Drum	transportation per 49 CFR/DATA Dangerous	TYPE OF CONTAINER	ag
DS=Drum	Goods Regulations but are not releasable per	NO. OF CONTAINER(S)	1
Solids	DOE Order 458.1. NA	VOLUME	60mL
L=Liquid		SAMPLE ANALYSIS	7195, CR6; COMMON;
O=Oil			
S=Soil			
SE=Sediment			
T=Tissue			
V=Vegetation			
W=Water			
WI=Wipe			
X=Other			

300-3138 COC

#3138
WCE1101

CHAIN OF POSSESSION	SIGN/ PRINT NAMES	SPECIAL INSTRUCTIONS
RELINQUISHED BY/REMOVED FROM	RECEIVED BY/STORED IN	Sample Filled
Frank Hall CHPRC	MAY 26 2016 0940 C.M. Aguilar/CHPRC	
RELINQUISHED BY/REMOVED FROM	RECEIVED BY/STORED IN	
C.M. Aguilar/CHPRC	MAY 26 2016 1015 L. Anderson, TRVL IN	
RELINQUISHED BY/REMOVED FROM	RECEIVED BY/STORED IN	
	MAY 26 2016 1015	
RELINQUISHED BY/REMOVED FROM	RECEIVED BY/STORED IN	
RELINQUISHED BY/REMOVED FROM	RECEIVED BY/STORED IN	
RELINQUISHED BY/REMOVED FROM	RECEIVED BY/STORED IN	
RELINQUISHED BY/REMOVED FROM	RECEIVED BY/STORED IN	

LABORATORY SECTION	RECEIVED BY	TITLE	DATE/TIME
FINAL SAMPLE DISPOSITION	DISPOSAL METHOD	DISPOSED BY	DATE/TIME

PRINTED ON 5/23/2016

FSR ID = FSR32404

TRVL NUM = TRVL-16-151

A-6003-618 (REV 2)

6/27/2016

FILTER

CH2MHill Plateau Remediation Company		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST				F16-042-007	PAGE 1 OF 1
COLLECTOR Frank Hafr CHPRG	COMPANY CONTACT TODAK, D	TELEPHONE NO. 376-6427	PROJECT COORDINATOR TODAK, D	PRICE CODE 7H	DATA TURNAROUND 30 Days / 30 Days		
SAMPLING LOCATION C9400, 1-005	PROJECT DESIGNATION 100-NR-2 Drilling - Water	FIELD LOGBOOK NO. HNF-N-645 4.11	ACTUAL SAMPLE DEPTH 65.5 ft	SAF NO. F16-042	AIR QUALITY <input type="checkbox"/>		
ICE CHEST NO.			COA 30-4070	METHOD OF SHIPMENT GOVERNMENT VEHICLE	ORIGINAL		
SHIPPED TO TestAmerica Incorporated, Richland	OFFSITE PROPERTY NO.	BILL OF LADING/AIR BILL NO.					
MATRIX* A=Air DL=Drum Liquids DS=Drum Solids L=Liquid O=Oil S=Soil SE=Sediment T=Tissue V=Vegetation W=Water WI=Wipe X=Other	*Contains Radioactive Material at concentrations that are not be regulated for transportation per 49 CFR/DATA Dangerous Goods Regulations but are not releasable per DOE Order 458.1. NA		PRESERVATION Cool <=6C	HOLDING TIME 24 Hours			
			TYPE OF CONTAINER ag	NO. OF CONTAINER(S) 1			
			VOLUME 60mL	7196, C96: COMMON?			
SPECIAL HANDLING AND/OR STORAGE	SAMPLE ANALYSIS						
SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME				
B35VF3	WATER	MAY 26 2016	0815	✓			

#3138
WCE1101

CHAIN OF POSSESSION		SIGN/ PRINT NAMES		SPECIAL INSTRUCTIONS	
RELINQUISHED BY/REMOVED FROM CHPRG	DATE/TIME MAY 26 2016 0900	RECEIVED BY/STORED IN C.M. Aguilar/CHPRG	DATE/TIME MAY 26 2016 0900	FILTER	
RELINQUISHED BY/REMOVED FROM C.M. Aguilar/CHPRG	DATE/TIME MAY 26 2016 1015	RECEIVED BY/STORED IN L. Anderson, TRVL	DATE/TIME MAY 26 2016 1015	FILTER	
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME		
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME		
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME		
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME		
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME		
LABORATORY SECTION	RECEIVED BY	TITLE		DATE/TIME	
FINAL SAMPLE DISPOSITION	DISPOSAL METHOD	DISPOSED BY		DATE/TIME	
PRINTED ON 5/23/2016					
FSR ID = FSR32404		TRVL NUM = TRVL-16-151		A-6003-618 (REV 2)	

6/27/2016

CH2MHill Plateau Remediation Company		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST				FL6-042-003	PAGE 1 OF 1
COLLECTOR	Frank Hall CHPRC	COMPANY CONTACT	TODAK, D	TELEPHONE NO.	376-6427	PROJECT COORDINATOR	TODAK, D
SAMPLING LOCATION	C9400, I-005	PROJECT DESIGNATION	100-NR-2 Drilling - Water		SAF NO.	FL6-042	AIR QUALITY
ICE CHEST NO.	N/A	FIELD LOGBOOK NO.	HNF-N-645 4.11	ACTUAL SAMPLE DEPTH	65.5	COA	304070
SHIPPED TO	TestAmerica Incorporated, Richland	OFFSITE PROPERTY NO.			BILL OF LADING/AIR BILL NO.	METHOD OF SHIPMENT GOVERNMENT VEHICLE	
MATRIX*	A=Air DL=Drum L=Drum DS=Drum S=Drum L=Liquid O=Oil S=Soil SE=Sediment T=Tissue V=Vegetation W=Water WT=Wipe X=Other	POSSIBLE SAMPLE HAZARDS/REMARKS *Contains Radioactive Material at concentrations that are not be regulated for transportation per 49 CFR/JATA Dangerous Goods Regulations but are not releasable per DOE Order 458.1. NA	PRESERVATION Cool <=6C	HOLDING TIME 48 Hours	TYPE OF CONTAINER P	NO. OF CONTAINER(S) 1	VOLUME 500mL
SPECIAL HANDLING AND/OR STORAGE		SAMPLE ANALYSIS		SEE ITEM (1) IN SPECIAL INSTRUCTIONS		#3138 WC1101	
SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME				
B35VD9	WATER	MAY 26 2016	0815				

CHAIN OF POSSESSION		SIGN/PRINT NAMES		SPECIAL INSTRUCTIONS	
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME	(1) 300.0 ANIONS IC: COMMON {Chloride, Fluoride, Nitrogen in Nitrate, Nitrogen in Nitrite, Sulfate}; 300.0 ANIONS_IC: COMMON (Add-on) {Phosphorus in phosphate}; Sample Filled	
Frank Hall CHPRC	MAY 26 2016 0900	C.M. Aguilar/CHPRC	MAY 26 2016 0900		
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME		
C.M. Aguilar/CHPRC	MAY 26 2016 1015	RECEIVED BY/STORED IN	MAY 26 2016 1015		
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME		
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME		
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME		
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME		
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME		
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME		
LABORATORY SECTION	RECEIVED BY	TITLE		DATE/TIME	
FINAL SAMPLE DISPOSITION	DISPOSAL METHOD	DISPOSED BY		DATE/TIME	

PRINTED ON 5/23/2016

FSR ID = FSR32404

TRVL NUM = TRVL-16-151

A-6003-618 (REV 2)

Detection Summary

Client: CH2M Hill Plateau Remediation Company
Project/Site: F16-042

TestAmerica Job ID: 300-3138-1
SDG: WC1101

Client Sample ID: B35VD8

Lab Sample ID: 300-3138-1

No Detections.

Client Sample ID: B35VF3

Lab Sample ID: 300-3138-2

No Detections.

Client Sample ID: B35VD9

Lab Sample ID: 300-3138-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	44	D	0.40	0.20	mg/L	2		300.0	Total/NA
Nitrate as N	13	D	0.28	0.14	mg/L	10		300.0	Total/NA
Fluoride	0.38	D	0.10	0.050	mg/L	2		300.0	Total/NA
Nitrite as N	0.097	D	0.076	0.038	mg/L	2		300.0	Total/NA
Sulfate	110	D	2.5	1.3	mg/L	10		300.0	Total/NA

This Detection Summary does not include radiochemical test results.

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Client Sample Results

Client: CH2M Hill Plateau Remediation Company
Project/Site: F16-042

TestAmerica Job ID: 300-3138-1
SDG: WC1101

Client Sample ID: B35VD8

Date Collected: 05/26/16 08:15

Date Received: 05/26/16 10:15

Lab Sample ID: 300-3138-1

Matrix: Water

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cr (VI)	0.0015	U	0.0040	0.0015	mg/L			05/27/16 11:17	1

Client Sample ID: B35VF3

Date Collected: 05/26/16 08:15

Date Received: 05/26/16 10:15

Lab Sample ID: 300-3138-2

Matrix: Water

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cr (VI)	0.0015	U	0.0040	0.0015	mg/L			05/27/16 11:18	1

Client Sample ID: B35VD9

Date Collected: 05/26/16 08:15

Date Received: 05/26/16 10:15

Lab Sample ID: 300-3138-3

Matrix: Water

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	44	D	0.40	0.20	mg/L			05/26/16 17:09	2
Nitrate as N	13	D	0.28	0.14	mg/L			05/26/16 19:25	10
Fluoride	0.38	D	0.10	0.050	mg/L			05/26/16 17:09	2
Nitrite as N	0.097	D	0.076	0.038	mg/L			05/26/16 17:09	2
Orthophosphate as P	0.082	U D	0.16	0.082	mg/L			05/26/16 17:09	2
Sulfate	110	D	2.5	1.3	mg/L			05/26/16 19:25	10

QC Sample Results

Client: CH2M Hill Plateau Remediation Company
Project/Site: F16-042

TestAmerica Job ID: 300-3138-1
SDG: WC1101

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 300-4330/5

Matrix: Water

Analysis Batch: 4330

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrate as N	0.014	U	0.028	0.014	mg/L			05/26/16 14:09	1
Nitrite as N	0.019	U	0.038	0.019	mg/L			05/26/16 14:09	1
Orthophosphate as P	0.041	U	0.082	0.041	mg/L			05/26/16 14:09	1

Lab Sample ID: LCS 300-4330/6

Matrix: Water

Analysis Batch: 4330

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Nitrate as N	2.26	2.25		mg/L		99	80 - 120
Nitrite as N	3.04	3.05		mg/L		100	80 - 120
Orthophosphate as P	6.53	6.47		mg/L		99	80 - 120

Lab Sample ID: 300-3137-A-16 MS

Matrix: Water

Analysis Batch: 4330

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Nitrate as N	2.5	D	0.452	3.03	D	mg/L		119	75 - 125
Nitrite as N	0.038	U D	0.609	0.527	D	mg/L		87	75 - 125
Orthophosphate as P	0.082	U D	1.31	1.13	D	mg/L		87	75 - 125

Lab Sample ID: 300-3137-A-16 DU

Matrix: Water

Analysis Batch: 4330

Client Sample ID: Duplicate

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Nitrate as N	2.5	D	2.41	D	mg/L		4	20
Nitrite as N	0.038	U D	0.038	U D	mg/L		NC	20
Orthophosphate as P	0.082	U D	0.082	U D	mg/L		NC	20

Lab Sample ID: MB 300-4331/5

Matrix: Water

Analysis Batch: 4331

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	0.10	U	0.20	0.10	mg/L			05/26/16 14:09	1
Fluoride	0.025	U	0.050	0.025	mg/L			05/26/16 14:09	1
Sulfate	0.13	U	0.25	0.13	mg/L			05/26/16 14:09	1

Lab Sample ID: LCS 300-4331/6

Matrix: Water

Analysis Batch: 4331

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	16.0	15.7		mg/L		98	80 - 120
Fluoride	4.00	3.94		mg/L		98	80 - 120
Sulfate	20.0	19.7		mg/L		99	80 - 120

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QC Sample Results

Client: CH2M Hill Plateau Remediation Company
Project/Site: F16-042

TestAmerica Job ID: 300-3138-1
SDG: WC1101

Method: 300.0 - Anions, Ion Chromatography (Continued)

Lab Sample ID: 300-3137-A-16 MS

Matrix: Water

Analysis Batch: 4331

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	11	D	3.20	14.4	D	mg/L		109	75 - 125
Fluoride	0.30	D	0.800	1.06	D	mg/L		95	75 - 125

Lab Sample ID: 300-3137-A-16 MS

Matrix: Water

Analysis Batch: 4331

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Sulfate	51	D	20.0	70.8	D	mg/L		100	75 - 125

Lab Sample ID: 300-3137-A-16 DU

Matrix: Water

Analysis Batch: 4331

Client Sample ID: Duplicate

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Chloride	11	D	10.6	D	mg/L		4	20
Fluoride	0.30	D	0.294	D	mg/L		3	20

Lab Sample ID: 300-3137-A-16 DU

Matrix: Water

Analysis Batch: 4331

Client Sample ID: Duplicate

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Sulfate	51	D	51.0	D	mg/L		0.4	20

Method: 7196A - Chromium, Hexavalent

Lab Sample ID: MB 300-4355/3

Matrix: Water

Analysis Batch: 4355

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cr (VI)	0.0015	U	0.0040	0.0015	mg/L			05/27/16 11:14	1

Lab Sample ID: LCS 300-4355/4

Matrix: Water

Analysis Batch: 4355

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Cr (VI)	0.250	0.255		mg/L		102	80 - 120

Lab Sample ID: 300-3138-1 MS

Matrix: Water

Analysis Batch: 4355

Client Sample ID: B35VD8

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Cr (VI)	0.0015	U	0.0500	0.0466		mg/L		93	75 - 125

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QC Sample Results

Client: CH2M Hill Plateau Remediation Company
Project/Site: F16-042

TestAmerica Job ID: 300-3138-1
SDG: WC1101

Method: 7196A - Chromium, Hexavalent (Continued)

Lab Sample ID: 300-3138-1 DU

Matrix: Water

Analysis Batch: 4355

Client Sample ID: B35VD8

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU		Unit	D	RPD	Limit
			Result	Qualifier				
Cr (VI)	0.0015	U	0.0015	U	mg/L	—	NC	20

QC Association Summary

Client: CH2M Hill Plateau Remediation Company
Project/Site: F16-042

TestAmerica Job ID: 300-3138-1
SDG: WC1101

HPLC/IC

Analysis Batch: 4330

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
300-3137-A-16 DU	Duplicate	Total/NA	Water	300.0	
300-3137-A-16 MS	Matrix Spike	Total/NA	Water	300.0	
300-3138-3	B35VD9	Total/NA	Water	300.0	
300-3138-3	B35VD9	Total/NA	Water	300.0	
LCS 300-4330/6	Lab Control Sample	Total/NA	Water	300.0	
MB 300-4330/5	Method Blank	Total/NA	Water	300.0	

Analysis Batch: 4331

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
300-3137-A-16 DU	Duplicate	Total/NA	Water	300.0	
300-3137-A-16 DU	Duplicate	Total/NA	Water	300.0	
300-3137-A-16 MS	Matrix Spike	Total/NA	Water	300.0	
300-3137-A-16 MS	Matrix Spike	Total/NA	Water	300.0	
300-3138-3	B35VD9	Total/NA	Water	300.0	
300-3138-3	B35VD9	Total/NA	Water	300.0	
LCS 300-4331/6	Lab Control Sample	Total/NA	Water	300.0	
MB 300-4331/5	Method Blank	Total/NA	Water	300.0	

General Chemistry

Analysis Batch: 4355

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
300-3138-1	B35VD8	Total/NA	Water	7196A	
300-3138-1 DU	B35VD8	Total/NA	Water	7196A	
300-3138-1 MS	B35VD8	Total/NA	Water	7196A	
300-3138-2	B35VF3	Total/NA	Water	7196A	
LCS 300-4355/4	Lab Control Sample	Total/NA	Water	7196A	
MB 300-4355/3	Method Blank	Total/NA	Water	7196A	

Lab Chronicle

Client: CH2M Hill Plateau Remediation Company
Project/Site: F16-042

TestAmerica Job ID: 300-3138-1
SDG: WC1101

Client Sample ID: B35VD8

Date Collected: 05/26/16 08:15

Date Received: 05/26/16 10:15

Lab Sample ID: 300-3138-1

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	7196A		1			4355	05/27/16 11:17	RLC	TAL RCH

Client Sample ID: B35VF3

Date Collected: 05/26/16 08:15

Date Received: 05/26/16 10:15

Lab Sample ID: 300-3138-2

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	7196A		1			4355	05/27/16 11:18	RLC	TAL RCH

Client Sample ID: B35VD9

Date Collected: 05/26/16 08:15

Date Received: 05/26/16 10:15

Lab Sample ID: 300-3138-3

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		2	10 mL		4330	05/26/16 17:09	CPM	TAL RCH
Total/NA	Analysis	300.0		2	10 mL		4331	05/26/16 17:09	CPM	TAL RCH
Total/NA	Analysis	300.0		10	10 mL		4330	05/26/16 19:25	CPM	TAL RCH
Total/NA	Analysis	300.0		10	10 mL		4331	05/26/16 19:25	CPM	TAL RCH

Client Sample ID: Duplicate

Date Collected: 05/25/16 13:18

Date Received: 05/26/16 10:15

Lab Sample ID: 300-3137-A-16 DU

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		2	10 mL		4330	05/26/16 15:09	CPM	TAL RCH
Total/NA	Analysis	300.0		2	10 mL		4331	05/26/16 15:09	CPM	TAL RCH
Total/NA	Analysis	300.0		10	10 mL		4331	05/26/16 17:55	CPM	TAL RCH

Client Sample ID: B35VD8

Date Collected: 05/26/16 08:15

Date Received: 05/26/16 10:15

Lab Sample ID: 300-3138-1 DU

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	7196A		1			4355	05/27/16 11:18	RLC	TAL RCH

Client Sample ID: Lab Control Sample

Date Collected: N/A

Date Received: N/A

Lab Sample ID: LCS 300-4330/6

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		1	10 mL		4330	05/26/16 14:24	CPM	TAL RCH

TestAmerica Richland

6/27/2016

Lab Chronicle

Client: CH2M Hill Plateau Remediation Company
Project/Site: F16-042

TestAmerica Job ID: 300-3138-1
SDG: WC1101

Client Sample ID: Lab Control Sample

Lab Sample ID: LCS 300-4331/6

Date Collected: N/A

Matrix: Water

Date Received: N/A

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		1	10 mL		4331	05/26/16 14:24	CPM	TAL RCH

Client Sample ID: Lab Control Sample

Lab Sample ID: LCS 300-4355/4

Date Collected: N/A

Matrix: Water

Date Received: N/A

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	7196A		1			4355	05/27/16 11:14	RLC	TAL RCH

Client Sample ID: Method Blank

Lab Sample ID: MB 300-4330/5

Date Collected: N/A

Matrix: Water

Date Received: N/A

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		1	10 mL		4330	05/26/16 14:09	CPM	TAL RCH

Client Sample ID: Method Blank

Lab Sample ID: MB 300-4331/5

Date Collected: N/A

Matrix: Water

Date Received: N/A

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		1	10 mL		4331	05/26/16 14:09	CPM	TAL RCH

Client Sample ID: Method Blank

Lab Sample ID: MB 300-4355/3

Date Collected: N/A

Matrix: Water

Date Received: N/A

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	7196A		1			4355	05/27/16 11:14	RLC	TAL RCH

Client Sample ID: Matrix Spike

Lab Sample ID: 300-3137-A-16 MS

Date Collected: 05/25/16 13:18

Matrix: Water

Date Received: 05/26/16 10:15

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		2	10 mL		4330	05/26/16 14:54	CPM	TAL RCH
Total/NA	Analysis	300.0		2	10 mL		4331	05/26/16 14:54	CPM	TAL RCH
Total/NA	Analysis	300.0		10	10 mL		4331	05/26/16 17:40	CPM	TAL RCH

TestAmerica Richland

6/27/2016

Lab Chronicle

Client: CH2M Hill Plateau Remediation Company
Project/Site: F16-042

TestAmerica Job ID: 300-3138-1
SDG: WC1101

Client Sample ID: B35VD8

Date Collected: 05/26/16 08:15

Date Received: 05/26/16 10:15

Lab Sample ID: 300-3138-1 MS

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	7196A		1		3.0 mL	4355	05/27/16 11:15	RLC	TAL RCH

Laboratory References:

TAL RCH = TestAmerica Richland, 2800 George Washington Way, Richland, WA 99352, TEL (509)375-3131

Method Summary

Client: CH2M Hill Plateau Remediation Company
Project/Site: F16-042

TestAmerica Job ID: 300-3138-1
SDG: WC1101

Method	Method Description	Protocol	Laboratory
300.0	Anions, Ion Chromatography	MCAWW	TAL RCH
7196A	Chromium, Hexavalent	SW846	TAL RCH

Protocol References:

MCAWW = "Methods For Chemical Analysis Of Water And Wastes", EPA-600/4-79-020, March 1983 And Subsequent Revisions.

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

TAL RCH = TestAmerica Richland, 2800 George Washington Way, Richland, WA 99352, TEL (509)375-3131

6/27/2016

Sample Summary

Client: CH2M Hill Plateau Remediation Company
Project/Site: F16-042

TestAmerica Job ID: 300-3138-1
SDG: WC1101

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
300-3138-1	B35VD8	Water	05/26/16 08:15	05/26/16 10:15
300-3138-2	B35VF3	Water	05/26/16 08:15	05/26/16 10:15
300-3138-3	B35VD9	Water	05/26/16 08:15	05/26/16 10:15

Login Sample Receipt Checklist

Client: CH2M Hill Plateau Remediation Company

Job Number: 300-3138-1

SDG Number: WC1101

Login Number: 3138

List Number: 1

Creator: Anderson, Lori F

List Source: TestAmerica Richland

Question	Answer	Comment
Radioactivity wasn't checked or is \leq background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	N/A	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is $<6\text{mm}$ (1/4").	N/A	
Multiphasic samples are not present.	N/A	
Samples do not require splitting or compositing.	N/A	
Residual Chlorine Checked.	N/A	